semiconductor thin film selectively provided with the element of group ~~15~~ VA; and

carrying out a third heat treatment for the at least one crystalline semiconductor island at 900 to 1200°C in a reducing atmosphere.

26. A method according to claim 25 wherein the element of group ~~15~~ VA comprises phosphorus.

27. A method of fabricating a semiconductor device including a thin film transistor, wherein the thin film transistor is formed through the steps of:

adding a catalytic element for facilitating crystallization of an amorphous semiconductor thin film to a part or an entire region of the amorphous semiconductor thin film;

carrying out a first heat treatment to transform the part or the entire region of the amorphous semiconductor thin film into a crystalline semiconductor thin film;

introducing phosphorus into the crystalline semiconductor thin film to form in the crystalline semiconductor thin film a source region and a drain region containing the phosphorus in the source region and the drain region;

carrying out a second heat treatment to getter the catalytic element into the source region and the drain region; and

carrying out a third heat treatment for the crystalline semiconductor thin film at 900 to 1200°C in a reducing atmosphere.

28. A method of fabricating a crystalline semiconductor thin film, comprising the steps of:

adding a catalytic element for facilitating crystallization of an amorphous semiconductor thin film to a part or an entire region of the amorphous semiconductor thin film;

carrying out a first heat treatment to transform the part or the entire region of the amorphous semiconductor thin film into a crystalline semiconductor thin film; and

carrying out a second heat treatment for the crystalline semiconductor thin film at 900 to 1200°C in an atmosphere containing hydrogen therein.

29. A method of fabricating a crystalline semiconductor thin film, comprising the steps of: